

RECEIVED**CENTRAL FAX CENTER**Milton STOLLER et al., S.N. 10/723,406
Page 13**MAY 27 2008** Okt. 1166/66306**REMARKS**

The application has been reviewed in light of the Final Office Action dated February 26, 2008. Claims 1-40 are pending, with claims 29-31 and 37-40 having been withdrawn by the Patent Office from examination. By this Amendment, claims 1 and 2 have been amended. Accordingly, claims 1-28 and 32-36 are presented for reconsideration, of which claims 1, 2, 13, 22, 32 and 33 are in independent form.

Section 5 of the Office action rejects claims 29- 30 and 37-38, but those claims were non-elected. Applicants assume that there was no intent to treat these claims as pending. If that is an incorrect assumption, applicants respectfully request withdrawal of the finality of the Final Office Action.

Applicants have carefully considered the Examiner's comments regarding claims 1-28 and 32-36 and the cited art, and respectfully submit that claims 13-28 and 32-36 of record, and claims 1 and 2 as amended as dependent claims 3-12, are patentable for at least because they involve:

- In amended claims 1, 2, the recitation "computer-processing the first single coordinate, without processing a second coordinate from said second image, to define a first conceptual plane;"
- In independent claim 13, the recitation "computer-processing the two-dimensional information from the scout image and the one-dimensional information from the at least one stereo image to produce three-dimensional information regarding a target;"

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- In independent claim 22, the recitation "computer-processing the two-dimensional information from the scout image and the one-dimensional information from each of the one or more stereo images to position a needle guidance stage relative to the breast and control needle depth for insertion into the breast;"
- In independent claim, the recitation "said computer processing said pair of coordinates from the first image and said single coordinate from the second image to calculate a location of a target" and
- In independent claim 33, the recitation "said computer processing said pair of coordinates from the scout image and said single coordinate related to one or more of said planes to calculate a three dimensional position of at least one target in the breast and provide information for positioning the needle guidance stage relative to the breast and for depth of insertion of a needle into the breast."

Applicants submit that the amendments of claims 1 and 2 only emphasize the feature already recited in these claims (the use of a single coordinate from the second image) and do not require undue work on the part of the Office. Accordingly, Applicants request entry of the amended versions of these claims.

The principal reference, Siczek, et al. U.S. Patent 5,803,912 ("Siczek") is understood to use a pair of coordinates from each of two stereo images, which coordinates identify the image of a target in each of the two stereo images. There is some confusion in the Siczek specification regarding coordinates of the target images in the two stereo views and positions of reference markers imaged in these views. The "point of interest 209" of Fig. 15 to which Siczek refers in

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Column 14 at lines 11, 20, 25, 31, 40, 44 and 45 appears to be the image in the stereo views of a target in the breast. Siczek refers to "reference marks 111, 113 in each X-ray image 208, 210" in Column 14, lines 52-53 when referring to Fig. 15 (see Column 13, line 66), but Fig. 15 shows points 211, 213 rather than marks 111, 113. Let us assume for the following discussions that the reference numerals 111 and 211 were meant to refer to the same point in the two stereo images, and numeral 113 and 213 also were meant to refer to the same point in the two stereo images.

With that assumption, it still appears that Siczek processes two coordinates for target point 209 from each of the two images 208, 210 in order to calculate the target position in three dimensions, and fails to appreciate that with respect to target point 209 one can use only a single one-dimensional coordinate from one of the images.

Siczek does state that "Due to the geometry ... only the X coordinate of the point of interest 209 changes" (Column 14, lines 42-44) and that "The parallax error in the Y direction is constant since both the left and right registration marks 211, 213 have the same Y-coordinates ..." (Column 15, lines 20-23). Siczek applies this parallax correction to shift the reference marks 211, 213 and, thereafter "so that a data point between them can be located" (Column 15, lines 34-38) and "This point arbitrarily becomes location 0,0 of the two stereoscopic X-ray images 208, 210" (Column 15, lines 38-39).

Importantly, this is the end of the suggestion of constant parallax error in the Y-direction and that only the X-coordinate changes. This suggestion only applies to the reference marks 111,113 or 211,213.

When it comes to any other point in the images, the processing in Siczek discusses the use of two coordinates from each of the two stereo images:

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Subsequently, any digitized point in the two stereotactic X-ray images 208, 210 is manipulated by the transformation matrix to produce the X and Y coordinates of that point relative to the location 0,0 on the images.

* * *

After digitizing the point of interest 209 shown on the two stereoscopic X-ray images 208, 210 ... the point of intersection in X,Y,Z space is determined . . .

Siczek, Column 15, lines 40-55.

This, in Siczek points other than the reference marks are digitized to produce both X and Y coordinates in each of the two stereo images, and the so-digitized points (such as target point 209) are processed, with two coordinates in each of the two images, to calculate the three-dimensional position of the target.

In contrast, the captioned patent application teaches a different approach, in which only a single coordinate of the target point from a first image is used, together with two-coordinates from a second image, to find the three-dimensional position of the target and/or other valuable information, thus saving time and reducing errors that might result from erroneous determination of the second coordinate of the point of interest in the first image. These differences are recited in the independent claims as set out above, before the discussion of Sizek.

The other references combined with Siczek in a rejection of these independent claims and their directly or indirectly dependent claims, do not supply the teaching missing from Siczek in this respect. As understood, Berestov U.S. Patent 6,222,904 was cited in the Office Action as proposing use of a digital x-ray receptor. Soo, Am J Roentgenology, 171, 615-617, 1998, was cited as proposing a target-on-scout stereotactic system that calculates lesion coordinates from a

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scout image and a single unobstructed stereo image. Chen U.S. Patent 4,875,478 was cited in the Office Action as proposing performing mammographic procedures while the upper body of a patient is upright.

Accordingly, for at least the above-stated reasons, Applicant respectfully submits that independent claims 1, 2, 13, 22, 29, 32, 33 and 37, and their respective dependent claims are patentable over the cited art.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any fees that are required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

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Respectfully submitted,



Paul Teng, Reg. No. 40,837
Attorney for Applicant
Cooper & Dunham LLP
Tel.: (212) 278-0400